Advanced Wireless Digital Sound Processor

PXE-0850S

TCR TIME CORRECTION   •Optical   CROSSOVER   8 BAND Parametric EQ   Bluetooth

- • User Manual
  Please read this manual carefully
  before using the product.

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Operating Instructions

⚠ Warning

This symbol is intended to alert you. It may cause serious injury or death if neglected by you.

Please immediately stop using the product if any problem occurs.
Please send the product to the designated Alpine dealers or nearby Alpine service centers for repairing.

Do not use any functions that may divert your attention when driving.
Only use such functions that distract you when the car stops. Make sure that you park your car in a safe place before using such functions. Otherwise, it may cause accidents.

Keep the audio volume to a level that will not block out outside traffic noises.
It's dangerous or may cause accidents, if the audio volume is too loud to hear the sirens of emergency vehicles or road sirens (e.g. at the intersection of railway line). In addition, loud sound may hurt your hearing.

Do not disassemble or modify the product.
Otherwise, it may cause accident, fire or electric shock.

Keep children away from small parts, such as bolts and screws.
Swallowing them may result in serious injury. In case of swallow, please consult a physician immediately.

This product only applies to 12V -type vehicles.
Otherwise, it may cause fire, electric shock or other injury.

⚠ Attention

This symbol is intended to alert you. It may cause injury or damage devices if you don't pay attention.

Important Instructions

Product Cleaning
Please clean the product by a dry soft cloth regularly. Clean the product only with a soft cloth dampened with water, if the dirt is not easily removed. Other solvents may be soluble.

Temperature
Please ensure the in-vehicle temperature between +60°C and -20°C before use.

Maintenance
Should you meet any problems, please do not attempt to undertake repairs yourself. Please send the product to Alpine dealers or nearby Alpine service centers for repairing.

Installation Location
Do not install PXE-0850S in the following places:
- Under the direct sunshine or near heating sources
- A very humid place or near water source
- Dusty place
- A place of violent vibration

⚠ Attention

Alpine is not liable for any documents loss, including lost documents when using this product.

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Alpine Electronics, Inc. has been authorized to use them.

How to read this manual

Preparatory Works

PXE-0850S machine is supplied with the wired controller. Using the wired controller could easily control PXE-0850S machine, or use PXE-0850S app or software to adjust or set the audio effect of PXE-0850S machine. These three control methods are varied and thus they will be described individually in the following chapters. Functions are listed as follows:
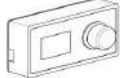
Function List

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Note: Priority: Music Play: Bluetooth>High Level, Low Level, Digital;
Data Connections: Mobile Phone App, Software for PC > Wired Controller.

Accessory List

For the model you purchased, the packing box should contain the following accessories.
If any items are missing, please immediately contact retailers or manufacturers.

Accessory	Quantity
Stand mount	4 (pieces)
USB3.0 extension cable	1 (piece)
High level input connector and input & output cords	1 (piece)
Speaker cable	2 (pieces)
Wired controller	1 (set)
External Bluetooth	1 (set)
Manual	1 (booklet)

USB3.0 extension cable ×1

High level input connector and input & output cords ×1

Stand mount ×4

Speaker cable ×2

External Bluetooth ×1

Wired controller ×1

Mobile Phone App Instructions

PXE-0850s Mobile Phone Setup

1. Download the PXE-DSP-APP from the Google Play or iOS App store.
2. Turn Bluetooth ON and search for DSP-HD-AXXXXX on your smart device.
3. Pair to DSP-HD-AXXXXX
4. Launch PXE-DSP App
5. Press the Bluetooth symbol and select DSP-HD-AXXXXX
6. Bluetooth logo will turn Green when paired.

Go to Alpine page → Read the Disclaimer carefully and click "Accept" to go to the homepage.
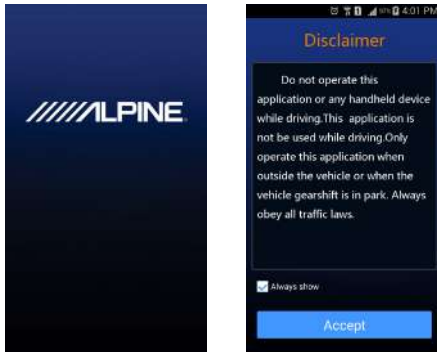
I. Homepage Interface

Control Interface

1. Select one of the five functional control interfaces.

Machine Connections

1. [⚡] represents that Bluetooth is not connected. If mobile phone has connected to Bluetooth, start app and it will be automatically connected. Bluetooth icon will become green [⚡] represents that app could control main machine to play music and set data. If click [⚡] and switch to [⚡], mobile phone could play music but app couldn't control the machine.

2. Click [ ] and go to [About] to view the version of the machine. Click [Exit] to close the app.
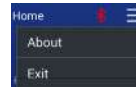
Switch Audio Input Source

1. You could select any type of sound sources.
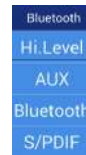
For example: if the main machine inputs high level, the type of sound source will select "high level".

Set Preset Sound Effect

1. The machine has six preset sound effect spaces, which could store and call sound effect data.

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Protected Settings

1. For called sound effect data, you could click [Lock] to set a six-digit password to encrypt 31-band EQ frequency, Q-value and gain data. Meanwhile, tuning data could be encrypted, such as delay, channel, phase position and equalizer. Only current sound effect is encrypted, rather than all preset data. Encrypted sound effect data could be saved as preset sound effector a computer file. Copy and transmission don't compromise encryption protection. For encrypted data, click [Unlock] and enter the password to unlock.

Warning! Please make sure to remember the password. If you forget your password, you couldn't decrypt.

Adjust the Master Volume

1. Display the master sound volume, control master sound volume tuning and mute button.

II. Click [EQ] to enter EQ interface.
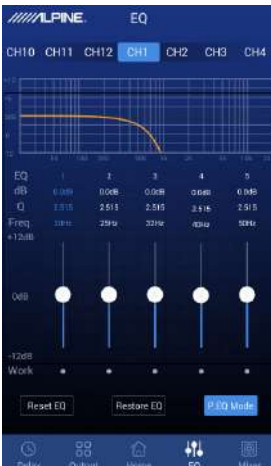
Switch Output Channel

1. Select output channel. There are 12 output channels and you could select the output channel by sliding left or right.

Set Output Channel EQ

1. EQ curve, gain, Q value and frequency tuning interface.
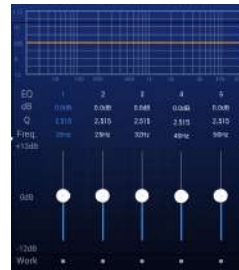
2. In [Pararmetric EQ], click related values to set gain, Q value and frequency of related EQ channel. In [Graphic EQ], you couldn't change Q value and frequency and only EQ's gain is adjustable.

3. Adjust gain by the following icons. The range of gain is -12dB~+12dB.

Set Equalizer

1. Click [Reset EQ] to reset all EQ parameters to their default values and the preset values couldn't be restored. Click [Direct EQ] to set all EQ gains to zero. Click [Restore EQ] to restore values before zero.

III. Click [Channel] to enter the channel interface.

Set Crossover

1. Crossover: Each channel is equipped with high-pass and low-pass filter.

2. Filter types: Linkwitz-Riley, Bessel and Butterworth.
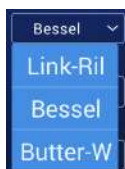
3. The range of filter crossover is 20Hz~20KHz. Click related value to set the frequency. The resolution is set at 1Hz.
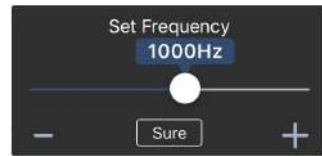
4. The range of slope filter (slope) is: 12dB/Oct ~ 48dB/Oct and the resolution is 6dB/Oct.

Set Sound Volume and Phase Position of Output Channel

1. Set channel output sound volume:

Click [Positive] or [Inverted] to change phase position of this output channel: positive or inverted phase.
Click [ ] to set the channel mute or not.

Select Type of Output Channel

1. Click the window to select channel type:

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Configure Output Signal Function

1. Click [Reset] to clear all output settings.
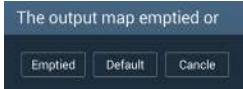
2. Click [Link] to link the left and right channel.
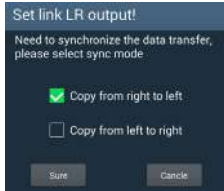
3. Channel interface will show related value for linked tuning.

IV. Click [Delay] to enter the delay interface.

Default of channel type

Channel type is cleared

Set Delay

1. The default unit of delay is [Millisecond] and either [cm] or [inch] is also available for selection.

2. Click the loudspeaker of related channels to set delay.

V. Click [Audio Mixing] to enter the audio mixing interface.
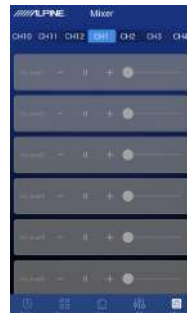
Set Audio Mixing

   1. PXE-0850S machine allows to set the sound volume allocated to each output channel after the sound source is input into the DSP, adjust the sound volume of each source to mix audio effects.

Note: Please refer to software instructions for operating audio mixing (See page 15 and 16).

Software Instructions

Download PXE-0850S software for PC from Alpine-usa.com. After PXE-0850S software is installed, connect the PXE-0850S to the PC.

Note: The functions of app are the same as software. So, please refer to the instructions for software for mobile devices.

1. Important Instructions for Software Installation

• Software is run in Microsoft® Windows® system.

Operating system: WindowsXP, WindowsVista, Windows7, Windows8, Windows10

CPU: 1.6GHz or higher

Memory card: 1GB or higher

Hard disk: 512MB or more space

PC resolution: 1280*768 or higher

• Before connecting PXE-0850S main machine to PC, please install PXE-0850S software.

2. Introduction to Software Main Interface

Control Interface

PXE-0850S PC software has two interfaces for controlling master tuning: EQ and audio mixing. Click [Audio & Mixing] button to enter audio mixing interface.

EQ interface

Audio Mixing Interface

3. Operating Instructions for Software

EQ Interface

When start PXE-0850S software, you will enter the EQ interface by default.

Machine Connections

1. The interface will show [Disconnect] before connecting to the machine and show [Connected] if the software has been successfully connected.

2. In the menu: there are two functions of file and option.

Click [File]:

a. Select [Upload a preset file from the computer]: Upload preset files stored in the computer as current machine's preset.

b. Select [Save as a preset file in the computer]: Save current preset in the computer for the future use.

c. Select [Upload all presets]: Upload all data files saved in the computer previously to the machine (Data files in the machine include current work preset, 6 sets preset, configured output channel data and data in the advanced setting). Namely, copy all tested data to the connected machine.

d. Select [Save all presets]: Save all data in the connected machine as computer file data (Data files in the machine include current work preset, 6 sets preset, configured output channel data and data in the advanced setting) for the future use. This operation won't change any data in the connected machine.

Click [Option]:
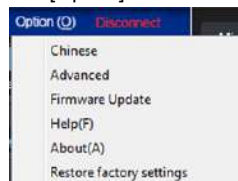
a. Switch between Chinese and English. Show [English] in Chinese and show [中文] in English.

b. Click [Advanced] to set input noise gate.

c. Set a signal threshold. If the input signal is higher than the threshold, it could be entered normally. Otherwise, it will be blocked. If the threshold is set reasonably, the machine will be automatically muted when the system has no signal input, so as to make system output quieter. Adjustment range: Close and -99.0dB~-40dB.

d. Click [Firmware Updating] and find the updated file by clicking "View File" on the dialog box and then click "Update" to update firmware. The progress bar starts to change color and firmware is up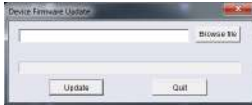dated if the progress bar reaches 100%. Click [Exit] to exit from firmware updating. After updated, the machine will be rebooted.

e. Click [About] to view the device version.

f. Click [Restore Factory Settings] to restore to the default settings.

Set Preset Sound Effect

1. Call and store preset sound effect. Click [Call] or [Save] to set six preset.

Data Encryption

1. Data encryption and decryption.

For adjusted sound effect data, click [Encryption] to set a six-digit password to encrypt 31-band EQ frequency, Q-value and gain data. Meanwhile, tuning data could be encrypted, such as delay, channel, phase position and equalizer. Only current sound effect is encrypted, rather than the whole machine data. After encrypted, the sound effect data could be saved as preset sound effect or computer file. Copy and transmission won't affect the encryption status. Encrypted data could be decrypted by clicking [Decryption] and entering the correct password.

Warning! Please make sure to remember the password. If you forget your password, you couldn't decrypt.

Switch Audio Input Source

1. Select type of sound source from the drop-down list.

Four types of sound sources are available for selection: Digital, Bluetooth, AUX and high-level input. Among them, Bluetooth has the highest priority. If the machine detects Bluetooth when playing music, the machine will switch to Bluetooth compulsorily and return to previous sound source when the music ends.

Adjust the Master Volume

1. Edit, adjust and display master sound volume of output signals.
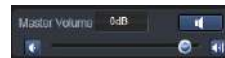
a. Adjust master sound volume: adjust the master volume by directly dragging the volume fader, or entering the value or scrolling mouse wheel. The adjustment range: Close -59dB~6dB.

b. Mute button: Click the panel of setting master sound volume [ ] to mute master sound volume and click again to cancel the mute (mute will be automatically canceled when adjusting the master sound volume).

Switch Output Channel

1. Channel edit and switch: totally 12 output channels could be edited or switched. The default settings of 12 output channels are illustrated in the figure.

Set Output Channel EQ

1. Frequency response curve and frequency dividing & EQ editing panel for output signal channel.

31 bands EQ are available for tuning. Move your mouse over the sequence number and hold. Move up and down to adjust the gain of EQ and move left and right to adjust EQ frequency. Move the mouse on the red box and adjust Q value of EQ by moving left and right. When making the adjustment, the parameter of EQ will show under the sequence number in real time and the value of EQ parameter editing panel will be updated.

Note: In the Graphic EQ model, frequency and Q value are fixed and only EQ gain could be adjusted.

2. The parameter display and editing panel for output signal channel.

The Parametric EQ model

The Graphic EQ model,

Frequency: In the Parametric EQ model, in the editing panel, adjust the frequency by directly entering the value, scrolling mouse wheel or pressing up/down arrow keys (The range of adjustment: 20Hz~20KHz); In the Graphic EQ model, the frequency is 1/3 times of sound interval by default.

Q value: In the parametric EQ model, in the editing panel, you could adjust Q value through directly entering the value, scrolling mouse wheel or pressing up/down arrow keys (The range of adjustment: 0.404~28.85); In the EQ model in the figure, Q value is 2.515 by default.

Gain: In the editing panel, adjust the gain by directly entering the value, scrolling the mouse wheel or pressing up/down arrow keys or directly dragging the fader (the range of adjustment: -12.0dB~12.0dB).

Set Equalizer

1. Output signal EQ model.

a. Click [Graphic EQ] and [Parametric EQ] to change the EQ model.

b. Click [Reset EQ]: All parameter EQs of current channel restore to the initial status: frequency is distributed evenly, Q value is 2.515 and gain is 0dB.

c. Direct EQ: When current channel EQ starts, this button will be shown and click [Direct EQ] to turn off all EQ on the current channel (Direct). Click the button and button will return to [Recovery EQ] status. Then, click [Recovery EQ]and all EQs on the current channel will return to the status activated last time.

Note: This operation could only change gain of EQ.

Set Frequency Divider

1. The editing panel of frequency divider for output signals.
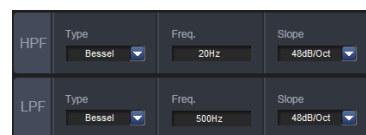
Type of filters: Drop-down menu, including Linkwitz-Riley, Bessel and Butterworth options.

Frequency setting: Adjust low-pass or high-pass frequency by directly entering the value, scrolling mouse wheel or pressing up/down arrow keys. Range of adjustment: 20Hz~20KHz.

Frequency slope (Slop) setting: Drop-down menu has 8 options: 12dB/Oct, 18dB/Oct, 24dB/Oct, 30dB/Oct, 36dB/Oct, 42dB/Oct, 48dB/Oct and close.

Set Sound Volume and Phase Position of Output Channel

1. The editing and display panel for output channel sound volume, low-pitched phase position, phase EQ, phase position editing and displaying panel.

In the positive phase position,

In the inverted phase position

a. Channel sound volume: Adjust the channel volume by directly scrolling the volume fader, or entering the value or scrolling mouse wheel. The range of adjustment: Close -59dB ~ 0dB.

b. Mute button: Click [ ] to mute the channel sound volume and click again to cancel the mute (mute will be automatically canceled when adjusting the channel sound volume).

c. Click [Positive Phase] to change output phase position: positive or inverted.

d. Low-pitched phase position and phase EQ: Adjust the phase by directly entering the value, scrolling mouse wheel or pressing up/down arrow keys. The range of low-pitched phase: 0° ~ 360°. The range of phase position EQ: 20Hz~20KHz.

Low-pitched phase position could set 20Hz-200Hz frequency bands adjustable at 0-360°, with a resolution of 2°. Phase position EQ could rotate 180° of nearby frequency point's signal phase position.

Select Type of Output Channel

1. Select output signal channel types.

Output channel could be configured in different types. Such as pre-three-modulus crossover and post-dual-crossover; 5.1 System; 7.1 System etc.

Configure Output Signal Function

1. Output signal channel configuration panel.

a. Click [Reset]: Clear or restore default output setting.

b. Click [Combined Tuning] to tune the left and right channel. You need to select the method for data synchronization before combined tuning.
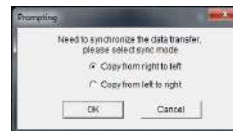
c. Click [EQ] or [Sound Source Mixing] to enter the tuning interface.

Set Delay

1. Output signal delay panel.
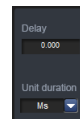
a. Delay: Adjust by directly entering the value, scrolling mouse wheel or pressing up/down arrow keys.

b. Delay unit: Drop-down menu, the default unit of delay is [Millisecond] and either [cm] or [inch] is also available for selection.

Audio Mixing Interface

In default output configuration, click [Audio Mixing] to enter the audio mixing interface. Click CH1~CH12 to view the interface of each default channel.
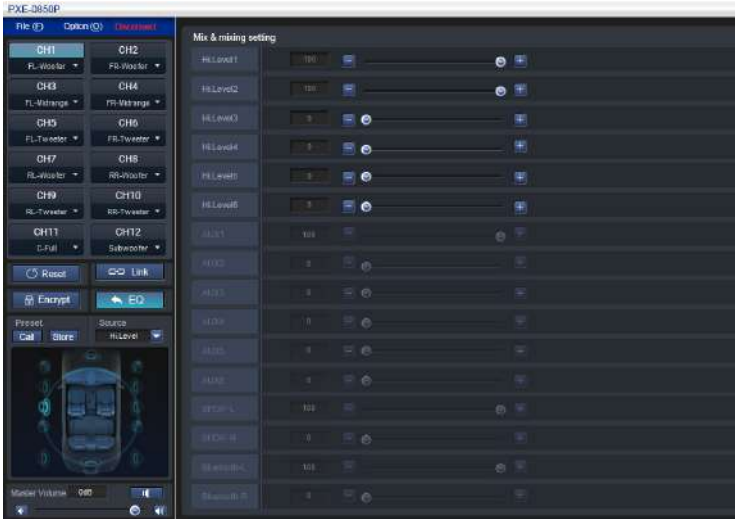
Set Audio Mixing

PXE-0850S machine allows to set the sound volume allocated to each output channel after the sound source is input into the DSP, adjust the sound volume of each source to achieve audio mixing.

Example 1: Illustration of original car main machine's high-level three-modulus active crossover and stereoscopic full-frequency output
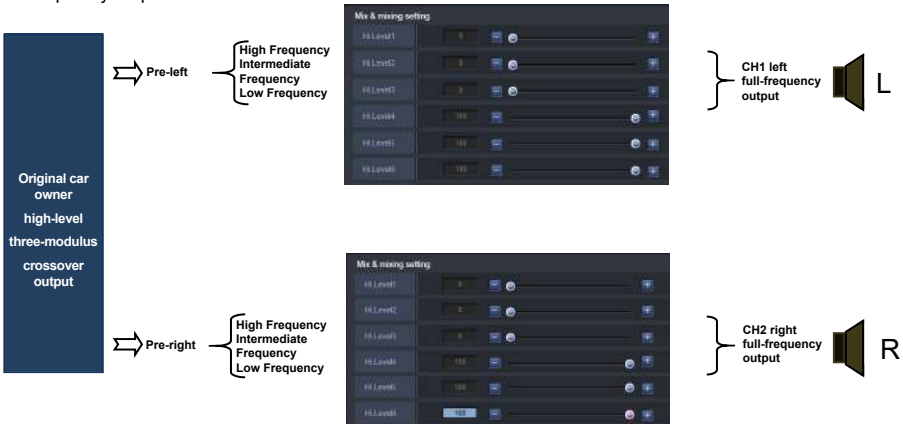
Example 2: Illustration of original car main machine's high-level dual-modulus active crossover and stereoscopic full-frequency output
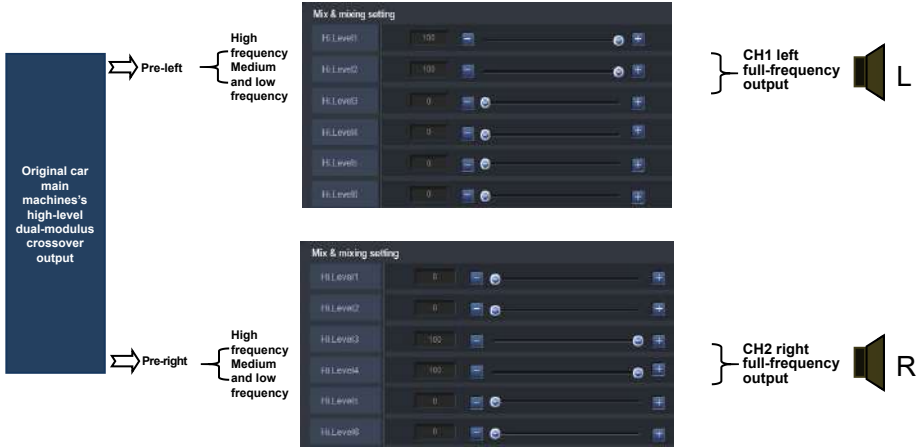
Example 3: Illustration of original car main machine's AUX connected to CD device, AUX mixing input and stereoscopic full-frequency output

Wired Controller Operating Instructions

PXE-0850S wired controller machine is only suitable for PXE-0850S machine. Before using wired controller, connect the wired controller to the main machine and ensure that software or app isn't connected. Connect PXE-0850S wired controller to PXE-0850S machine and power on properly.

Machine Connections

1. After the machine is connected, the following interface will show:

Control Interface

1. PXE-0850S machine's wired controller has the following control interface:

Adjust the Master Volume

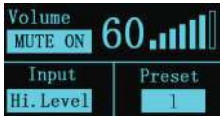1. Adjust the master sound volume of machine by twisting the knob of wired controller. Increase the sound volume by twisting the knob in a clockwise direction and decrease the sound volume in an anticlockwise direction. The wired controller interface will show the sound volume in real time.


2. Press the knob of the wired controller shortly to select the first functional panel - Mute panel and the screen will keep flashing. Set the mute by twisting the knob. Activate the mute by twisting the knob in a clockwise direction and the sound volume 0 will be displayed. If twisting the knob in an anticlockwise direction, the mute will turn off and the original sound volume will be restored. Long press the knob to exit from the functional panel.
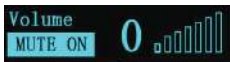
Note: The session will automatically time out if left idle for 20s.

Switch Audio Input Source

1. Short press the knob again to select the second functional panel - Switch to input sound source functional panel and the screen will keep flashing. Switch to related input sound source via knob. In the clockwise direction, options are: S/PDIF (digital), Hi.Level (high-level), Phone (Bluetooth), AUX (low-level). Long press the knob to exit from the functional panel.
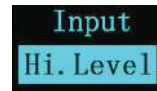
Note: The session will automatically time out if left idle for 20s.

Set Preset Sound Effect

1. Press the knob shortly to select the third functional panel - Call preset sound effect and the screen will keep flashing. 6 sets of preset sound effects are available for selecting via the knob. In the clockwise direction, there are 6 sets of preset sound effects available for selection.

Select the intended sound effect and press the knob shortly to call this sound effect. Long press the knob to exit from the functional panel.

Note: The session will automatically time out if left idle for 20s.

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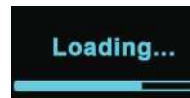
Machine Introduction

1. Diagram of Machine Connections
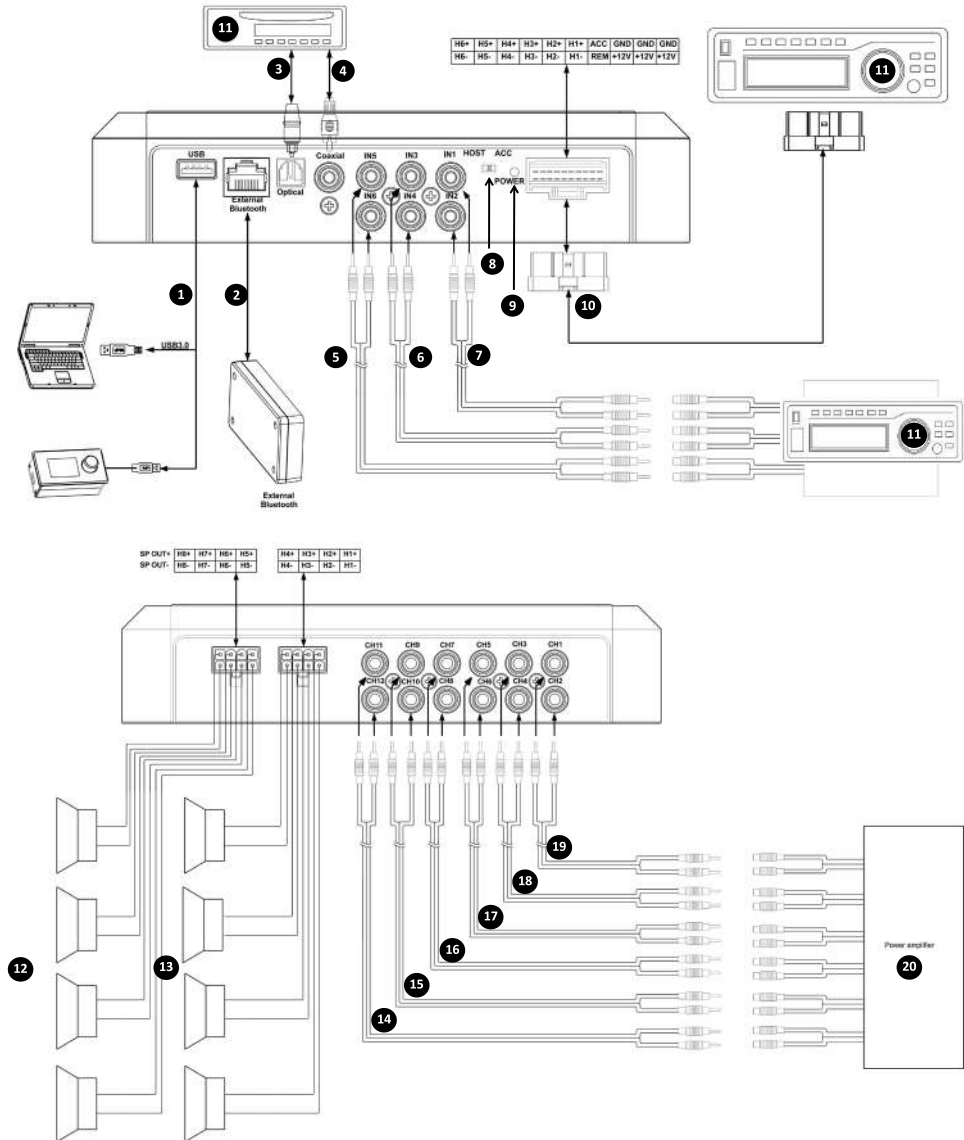
2. Introduction to Machine Interface

① Main machine USB port connects to the computer via USB3.0 cord. Start PXE-0850S software to switch sound sources of main machine and perform such functions as data storage, calling and EQ. USB port connects to the wired controller via USB3.0 cord and perform functions including switching sound source, data calling and adjusting master sound volume via the wired controller.

② The main machine is equipped with Bluetooth interface to play lossless music via Bluetooth and connect to PXE-0850S app. After the Bluetooth is connected, the indicator light will be on.

③④ Main machine optical fiber and coaxial interface connect to in-vehicle CD or DVD optical fiber or coaxial cable, switch the machine sound source to digital input, and play optical fiber or coaxial digital signals.

⑤⑥⑦ AUX input interface connects to in-vehicle CD or DVD low-level output, switches the machine sound source to AUX input and plays low-level signals.

⑧ REM input switch. When the switch is placed on the "ACC"-end, ACC will start. If the switch is placed on the "HOST"-end, high-level signal will start the machine.

⑨ Power indicator light.

⑩ High-level input and power input interface connects to in-vehicle CD or DVD. If the sound source switches to high-level, the machine will play high-level signals.

H6 +	H5 +	H4 +	H3 +	H2 +	H1 +	ACC	GND	GND	GND
H6 -	H5 -	H4 -	H3 -	H2 -	H1 -	REM OUT	+12 V	+12 V	+12 V

Notes:

A. Original cables for designated vehicles only or customer's customized external cables.

B. High-level REM input (HOST): for these two high-level input cables of H1+/H1- .

C. REM output, this machine has one REMOUT output, to control machine on-and-off by connecting to REM input of rear amplifier.

⑪ In-vehicle CD or DVD main machine.

⑫⑬ The amplifier output of the main machine connects to the speaker.

⑭⑮⑯⑰⑱⑲ 6 sets of RCA low-level output of main machine connects to external amplifier.

⑳ External amplifier.

Technical Parameter Indicators

1. Technical Specifications

Dynamic range	≥110dB
Signal-to-noise ratio	≥100dB
Total harmonic distortion	≤0.05%
Frequency response	20Hz~20KHz
Input impedance	Low-level input: 20KΩ, high-level input:330Ω
Low-level output impedance	51Ω
Scope of signal input and output	RCA input: 7.5Vpp; High-level: 24Vpp; RCA output: 7.5Vpp
Ambient temperature	-20~60°C
Storage temperature	-40~85°C
Power source	DC9 V~15V
Activate REM input	Options of high-level activation (H1+/H1-) and ACC activation for selection
Activate REM output	+12 V activation voltage output (0.1A)
Stand-by power consumption	≤0.1W
Gross weight	1.7kg
Dimension	210mm (long) 190mm (wide) 45mm (high)

2. Functional Parameter

Type of input signals	Options: 6 -channel high-level, 6-channel stereophonic low-level, optical, coaxial, Bluetooth
Output position	12-Channel RCA output, 8-circuit RMS power 8×25W
Output signal gain	Range of gain: mute, -59.9dB - 0dB.

Output signal EQ	EQ engine for each output channel:
	1. Type of EQ: The first EQ has options: parameter and low pitch.
	                    The second EQ has options: parameter and high pitch.
	                    Others are parametric EQ.
	2. Range of frequency: 20Hz~20KHz, resolution 1Hz.
	3. Q value (slope) : 0.404~28.85, resolution 0.01.
	4. Gain: -12.0dB~+12.0dB, resolution 0.1dB.

Output signal frequency divider	Each output is equipped with independent high and low-pass filter up to 2-order. 1. Type of filters: Butterworth, Linkwitz-Riley and Bessel. 2. Filter crossover points: 20Hz-20KHz. Resolution 1Hz. 3. Filter slope (Slope) setting: 12dB/Oct - 48dB/Oct.
Output phase position and delay	Each output channel could adjust phase position and delay. The scope of parameter: Phase position: positive and inverted (0°/180°). Delay: 0.000 - 20 milliseconds, 0.00 - 692 cm, 0.00 - 273 inches
Preset operation	The machine could save six presetting music presets.

Harmful Substances

Name and contents of poisonous and harmful substances or elements contained in PXE-0850S machine

Name of Accessories	Poisonous and harmful substances or elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr(VI))	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Circuit board components	O	O	O	O	O	O
Shell components	O	O	O	O	O	O
Display components	O	O	O	O	O	O
Accessories	O	O	O	O	O	O

O: represents that the content of poisonous and harmful substance contained in all homogeneous materials of this part meets the limits specified in SJ/T11363-2006 Requirements for Content Limitation for Certain Hazardous Substances in Electronic Information Products.

✗: represents that the content of poisonous and harmful substance contained at least in a certain homogeneous material of this part exceeds the limits specified in SJ/T11363-2006 Requirements for Content Limitation for Certain Hazardous Substances in Electronic Information Products; however, the content of items marked "✗" in above table exceeds the limits due to nonavailability of mature alternative technology in the sector.

Wherein, the components of circuit board include printing circuit board and its components such as resistance, capacitance, electrolysis and chip.